

CLAIMS

1. A method for manufacturing embedded capacitors comprising:
forming at least one bore in a dielectric substrate;
filling said bore with a conductive material to form a first electrode; and
disposing a conductor on said dielectric substrate, said conductor not being electrically continuous with said first electrode;
wherein at least one of a depth and a cross sectional area of said bore is selected to provide a desired amount of capacitive coupling between said electrode and said conductor.
2. The method of claim 1, further comprising disposing a second conductor on said dielectric substrate in electrical contact with said first electrode.
3. The method of claim 1, further comprising:
forming at least a second bore in said dielectric substrate;
filling said second bore with a conductive material to form a second electrode;
and
electrically connecting said first electrode and said second electrode.
4. The method of claim 1, further comprising:
forming at least a second bore in said dielectric substrate;
filling said second bore with a conductive material to form a second electrode;
and
electrically connecting said second electrode to said conductor.
5. The method of claim 1, wherein said forming at least one bore step further comprises mechanically punching said dielectric substrate.
6. The method of claim 1, wherein said forming at least one bore step further comprises laser cutting said dielectric substrate.

7. The method of claim 1, said first bore being formed in a first layer of said dielectric substrate, said method further comprising:
 - forming a second bore in a second dielectric layer;
 - filling said second bore with a conductive material; and
 - joining said first and second dielectric layers such that said conductive material in said first bore is electrically continuous with said conductive material in said second bore, said conductive material in said first and second bores forming an extended electrode.
8. A method for manufacturing embedded capacitors comprising:
 - forming at least one bore in a first dielectric layer;
 - filling said bore with a conductive material;
 - disposing a first conductor on said first dielectric layer, said first conductor being in electrical contact with said first electrode;
 - disposing a second conductor on a second dielectric substrate; and
 - joining together said first and second dielectric layers such that said first and second conductors are not electrically continuous;
 - wherein dimensions of at least one of said first conductor and said second conductor are selected to provide a desired amount of capacitive coupling between said first conductor and said second conductor.
9. An embedded capacitor comprising:
 - a substrate having an electrode, said electrode comprising a conductive material which has been filled into a bore within said substrate; and
 - a conductor on said substrate, said conductor not being electrically continuous with said first electrode;
 - wherein at least one of a depth and a cross sectional area of said bore is selected to provide a desired amount of capacitive coupling between said electrode and said conductor.
10. The embedded capacitor of claim 9, further comprising:

a second electrode, said second electrode comprising a conductive material which has been filled into a second bore within said substrate;

wherein said first and second bores are electrically connected.

11. The embedded capacitor of claim 9, wherein said substrate comprises a plurality of dielectric layers.

12. The embedded capacitor of claim 9, wherein said first electrode is disposed within a first layer of said substrate, said embedded capacitor further comprising:

a second electrode, said second electrode comprising a conductive material which has been filled into a second bore within a second layer of said substrate;

wherein said first and second bores are electrically connected.

13. The embedded capacitor of claim 9, further comprising a first conductor on said dielectric substrate, said first conductor being in electrical contact with said first electrode.

14. An embedded capacitor comprising:

a substrate comprising a plurality of dielectric layers;

an electrode disposed in a first of said dielectric layers, said electrode comprising a conductive material which has been filled into a bore within said substrate;

a first conductor disposed on said dielectric layer, said first conductor being in electrical contact with said electrode; and

a second conductor disposed on a second of said dielectric layers, said second conductor not being electrically continuous with said electrode;

wherein dimensions of said first and second conductors are selected to provide a desired amount of capacitive coupling between said first and second conductors.